



CP-00894-0401-08/02/94

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C-49-8-4-39

August 2, 1994

Project Number 1454

Commander  
LANTNAVFACENGCOM  
1510 Gilbert Street  
Norfolk, VA 23511-2699

Attention: Mr. Art Wells, Mail Code 1823

Reference: CLEAN Contract N62472-90-D-1298  
Contract Task Order No. 165

Subject: Naval Aviation Depot, MCAS Cherry Point, North Carolina  
Submission of Final Site Characterization and Evaluation Report

Dear Mr. Wells:

Attached please find eight (8) copies of the Final Site Characterization and Evaluation Report. At your request copies have been sent directly to Mr. Tim Osborne of your office, Ms. Linda Raynor of NCDEHNR and Ms. Gena Townsend of USEPA.

In addition, following find Halliburton NUS' response to comments presented by Linda Raynor and David Lilley, State of North Carolina Department of Environment, Health, and Natural Resources, in a letter dated May 26, 1994:

Linda Raynor's Comments:

Comment 1:

Table of Contents: Section 4 should be "SITE CONDITIONS" not "SITE ASSESSMENT."

Response:

Change will be made.

Comment 2:

Section 1.1, paragraph 2: The final version of the plan was submitted to the Navy on April 1, 1994, etc. Is this date correct? (The Work Plan Amendment was dated March 16, 1994.)

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Response:

Final date will be corrected to February 28, 1994.

Comment 3:

Section 1.3: Sections 4.0 through 7.0 are described wrong. Section 4.0 presents the site conditions, Section 5.0 presents the site assessment, Section 6.0 develops the baseline risk assessment, and Section 7.0 provides a summary to the site characterization.

Response:

Change will be made.

Comment 4:

Section 2.3, Site Descriptions: For each site, also need to describe its present usage; too many acronyms are utilized without explanation (what is motor T, MTIS, I and L, A/C, and DED?). For site 1, the railway spur on the west side of Building 154 (as shown on the topographic map) was not even mentioned. Is there any information on this railway? For Site 4, where is building 1857 (no figures I have seen show this building)? I thought Site 4 was between Buildings 245 and 423 and 424. What are the past and present usage of buildings 423 and 424? Place Building 423 location on Figure 3-4. For Site 5, I disagree that information on Buildings 86 and 246 is not relevant; present information on past and present usage of these buildings and area between, if known.

Response:

Where information is available additional descriptions will be included.

Comment 5:

Section 3.1: Where the surficial soils screened with the HNu? If so, what were the results?

Response:

The results of screening will be summarized. Refer to sample logsheets in Appendix A for detailed information.

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Comment 6:

Figures: Place groundwater flow direction on all figures. On Figure 3-3, locate soil boring 4. On Figure 3-4, locate Building 423.

Response:

Groundwater flow direction will be placed on all figures. Soil Boring 4 will be shown on Figure 3-3. Building 423 has been deleted from reference.

Comment 7:

Section 5.0: Site Assessment.

General Comment 1:

As stated in the Work Plan (Section 2.0 Sampling Objectives), "The objective of the sampling and analysis effort for CTO 165 is to identify and characterize chemical contaminations in media at five sites slated for construction activities. Planned construction will involve disturbance of surface soil and may facilitate chemical release both during and after excavation. Analytical data obtained for each of the sites will be used to quantitatively assess risk potential to laborers during excavation and construction to employees possible exposed after the completion of construction."

Upon review of the proposed Work Plan, several comments were submitted concerning soil sampling activities, several of which particularly stressed the sampling of surficial soils or the soils located immediately below the paved areas. [See EPA's comments in Gena's letters dated March 8, 1994 (bulleted item #3), and March 21, 1994 (comment #1 highlighted) and NC Superfund Section's comments in my letter dated April 5, 1994 (comment #1)].

For the 5 sites addressed, 50 soil borings were performed during this field event. Except for the 2 surface samples collected for TCLP and ICR analyses (D1-SO-05-0105 and 04-SO-13-0109) and sample 04-SO-07-1525 (which was sampled from 1.5 to 2.5 feet below ground surface because auger refusal was encountered at 2.5 feet), the only discrete soils collected for analyses were composite samples consisting of 4 to 6 samples that were analyzed for semi-volatiles, pesticides and PCBs. Therefore, there are no discrete (or composited) surficial soil samples that were analyzed for TCL Volatile Organic Compounds (VOCs), TAL Metals/Cyanide, TPH (low to medium and high boiling point) and Oil and Grease.

In order to properly identify, characterize, and delineate the extent of contamination and assess the risk potential at these sites, additional investigative sampling and analyses are necessary. As stated above, none of the surface soils have been analyzed for the parameters listed; therefore, discrete surficial (proceeding from the ground surface, or in the case where paving exists, from the contact of the paving and the soils) soil samples would need to be collected and

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analyzed for these missing parameters. Also, since the composite soil sampling performed indicated the presence of contaminants in several areas, (i.e., pesticides at Site 1 and PCBs at Site 2), further investigative sampling and analyses would also be necessary to properly identify, characterize and delineate the extent of contamination and assess risk potential.

Response:

Surface soil sampling has been performed and the results will be included in the Final Site Characterization and Evaluation Report.

General Comment 2 (regarding tables):

Tables should list background levels for metals in soil and groundwater for comparison purposes.

Tables should also be generated summarizing the following:

- Groundwater sampling results (with the NC Groundwater Standards listed and the exceedances to the groundwater standards denoted in the table).
- Soil sample results for TPH, TCLP, and ICR analyses.
- Concrete chip sample results for TCLP and ICR.

Response:

- Groundwater tables will be provided. Evaluation of the groundwater against North Carolina standards will be left to the current remedial investigation.
- These tables provide too much unnecessary information (i.e., all TCLP tests passed, and TPH hits are less than action levels). The reader will be referred to the Appendix for the analytical data.

Specific Comment:

Section 5.3.4, Site 4: Why did the scope of work performed at this site deviate from the Work Plan, regarding sampling depths and TCLP and ICR soil sampling? (I thought some of the soil samples were going to be collected from depths of approximately 13 feet (they were only collected to 9 feet), and that TCLP and ICR soil sampling was going to be performed near the proposed electrical vault (near 4SB13). Instead, soils were collected from borings 4SB5 and 4SB6.)

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Response:

Due to collapse of the hole below the groundwater surface samples were limited to the unsaturated zone. TCLP samples were collected at the planned locations. Typographical error in database will be corrected.

Comment 8 (Section 6.0, Risk Assessment, Section 6.5.2.3):

Section 6.5.2.3, North Carolina Action Levels for Petroleum-Contaminated Soils: The information in this section is outdated; the most recent guidelines can be found in the document entitled "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater" dated March 1993 (with June 1993 revisions incorporated). A copy of this document can be ordered from the NC Department of EHNH's Groundwater Section (Telephone: 919-733-8486).

Response:

The referenced document was ordered. Section 6.5.2.3 will be revised as appropriate.

Comment 8 (Table 6-10):

Several of the NC Groundwater Standards listed are not correct. The standard for 1,2-Dichlorobenzene is 0.62 mg/l; the standard for 1,4-Dichlorobenzene is 0.075 mg/l; and the standard for Heptachlor epoxide is  $4.0 \times 10^{-6}$ . (Also, see attached comments prepared by David Lilley.)

Response:

Change will be made.

Comment 9:

Appendix B, Boring Logs: Add well point construction diagrams (with water table levels indicated on the drawings). Note: Based on the water level measurements obtained in April 1994, it appears that most of the groundwater samples were collected from 3.5 to 4.5 feet below the water table.

Response:

Well construction diagrams will not be provided for the temporary well points. The well points were installed using a "direct push" technique that does not allow the collection of lithologic samples, hence no accurate construction diagram can be generated.

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Comment 10:

Appendix C, Analytical Database: A key should be provided for the abbreviations utilized in the laboratory results such as B, J, U, CRQL, etc. Where are the ICR results for the soil and concrete samples? The metals TCLP analyses sample identified as 04-SO-03-109 in the laboratory data conflicts with the sample log sheet information. (The log sheet for sample 04-SO-13-0109 specifies TCLP and ICR analyses. This may just be a typographical error.)

Response:

A qualifier definition sheet will be added to the beginning of the analytical database appendix. Typographical will be corrected.

David Lilley's Comments:

Comment 1:

Page 5-6: It is recommended that tables listing groundwater contaminants (similar to the tables listing soil contaminants) be included in this report.

Response:

A groundwater contaminant summary will be included.

Comment 2:

Page 6-3: It is not understood by the reader why the metals in soils were not compared to background concentrations.

Response:

The condensed schedule did not permit the compilation of a comprehensive and accurate background database. A background comparison of soils results from previous studies will be provided in the final report.

Comment 3:

Page 6-3, Section 6.1.1.2: The last sentence makes no sense.

Response:

The sentence will be clarified.

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Comment 4:

Page 6-3: It is unclear to the reader why the groundwater on Site 1 will be evaluated only for positively detected organics, and Site 4 groundwater will be evaluated only for metals.

Response:

Explanation will be clarified. The only complete exposure route to groundwater chemicals is assumed to be via inhalation of volatile emissions. Metals are not assumed present in the vapor phase, and therefore, will not be considered.

Comment 5:

Page 6-B, Section 6.1.2: It is stated that the concentrations to be used for the risk assessment are the maximum detected medium-specific concentrations. That is fine for the discrete samples but not for the composited samples in this situation. According to Risk Assessment Guidance for Superfund, Volume 1, Part A, composited samples can only be used to determine an average concentration. It is recommended that discrete sampling be used and the 95 percent Upper Confidence Limit (or the maximum detected concentrations, whichever is lower) be used as the exposure concentration. Combining areas where dissimilar types of contaminants are expected to be found dilutes contaminant concentrations. For example, for Sample No. 01-SO-0106, samples are taken over 300 feet from each other, some in oil tank areas, and one in the electric assembly area. This would dilute the PCB concentration. Also, none of the discrete samples were taken on the surface; they were taken at least 3 to 5 feet under the surface of the soil.

Response:

Discrete samples analyzed during the second investigation are the basis for the final Risk Assessment. Ninety-five percent UCL values and statistical evaluation of the data cannot be performed given the short period of time allowed for the SCER. The assessment, however, will not underestimate exposure concentrations through the use of maximum detected concentrations.

Comment 6:

Page 6-8: If future residential development is not planned or accounted for in the Risk Assessment, it must be noted on the deed that the area will not be used for residential purposes in the future.

Response:

The site is not being investigated in anticipation of site closure. The areas are being investigated in an additional study of the entire Operable Unit and the focus of this study is to evaluate risks associated with the construction and occupation of facilities in the industrial/commercial setting that currently exists.

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Comment 7:

Page 6-8, Section 6.2.2: Since surface soil contamination has been documented, exposure via the ingestion, dermal, and inhalation routes for long-term exposure must be quantified.

Response:

Long-term exposure to surface contaminants, known to be extremely localized and less than risk-based remediation standards, will not be evaluated. Occupational ingestion, dermal contact, and inhalation exposure to the soil is not likely, as a significant portion of the workday is spent indoors.

Comment 8:

Page 6-19, Section 6.4, and page 6-33: There is no such thing as "no risk."

Response:

The text will be clarified; however, no risk can be identified for incomplete exposure rates.

Comment 9:

Page 6-20, Section 6.4.2.1: It is stated that exposure by adult employees will be evaluated by ingestion and dermal contact with soil only. Exposure via the inhalation route must also be quantified.

Response:

The high ingestion rate used for the construction scenario (480 mg/day) accounts for ingestional exposure from hand-to-mouth and inhalation contact.

Comment 10:

Page 6-21, Section 6.4.1.2: Since groundwater could be used as a source of drinking water in the future, it is recommended groundwater exposure scenarios be evaluated.

Response:

Groundwater exposure will be addressed in Operable-Unit-wide study currently being conducted.



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Comment 11:

Page 6-31, first paragraph: It is stated that "attention should be paid to the target organ affected by each chemical." Describe in further detail how this is to be accomplished.

Response:

Text will be added.

Comment 12:

Page 6-31: The risk equation in the middle of the page needs to be used when the risk exceeds 0.01, not 0.1 as listed. Also, the equation given as:

$$\text{Risk} = 1 - [\exp(\text{intake} \times \text{CSF})]$$

should read:

$$\text{Risk} = 1 - \exp(-\text{intake} \times \text{CSF})$$

Response:

Change will be made.

Comment 13:

Page 6-35: The site-specific Health and Safety Plan, not the Risk Assessment, is the appropriate place to address issues such as respiratory protection.

Response:

Respiratory protection has been removed from reference.

General Comment:

The nature and extent of contamination has not been delineated at any of the sites, and the Risk Assessment is inadequate since it was based on composite sample results rather than discrete surficial soil samples; therefore, a Site Cleanup Plan is premature at this point.

Response:

The risk assessment has been revised based on discrete soil samples.

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General Comment 1 (regarding health and safety requirements):

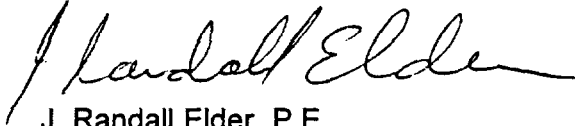
The Health and Safety Requirements section simply describes, in general, what is required under OSHA. When a site-specific Health and Safety Plan is submitted, I would be glad to review it.

Response:

A Health and Safety Plan is not being prepared as part of this CTO.

If you have any questions on this submittal, I can be contacted at 412-921-8524.

Very truly yours,



J. Randall Elder, P.E.  
Project Manager

JRE/

cc: Mr. Roger Boucher, NORTHDIV (letter only)  
Mr. Tim Osborne, LANTDIV  
Ms. Renee Henderson, MCAS Cherry Point  
Ms. Linda Raynor, NC DEHNR  
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Ms. Debra Wroblewski, Halliburton NUS, Pittsburgh (letter only)  
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